

**LISTING OF CLAIMS:**

1.-19. (Canceled)

20. (Currently amended) A porous film composed of a polymer material for a non-aqueous electrolyte secondary battery,

wherein:

the polymer material is at least one of ~~the materials or the modified materials thereof,~~  
including material selected from the group consisting of polybenzimidazole, polyimide,  
polyether imide, polyamide imide, polyphenylene sulfide, polyether sulfone, polysulfone,  
polyether ether ketone, polymethyl pentene, aramide, polyvinylidene fluoride, polyamide,  
polyethylene terephthalate, ~~polybutylene~~ polybutylene terephthalate, polyethylene naphthalate,  
~~polybutylene~~ polybutylene naphthalate, polyarylate, polyacetal and polyphenylene ether, and  
derivatives thereof;

the polymer material has a backbone chain and a substitutional group; and

at least a portion of the polymer material is modified by a modifier, the modifier having  
~~has~~ at least two successive carbon atoms bonded to ~~the~~ carbon atoms of the backbone chain and  
~~is modified by a modifier~~ having a predetermined substituent different from the substitutional  
~~group contained in the polymer material.~~

21. (Previously presented) The porous film composed of the polymer material for the non-aqueous electrolyte secondary battery, according to claim 20,

wherein:

the modifier is composed of a compound having an unsaturated multiple bond in the molecule thereof;

a LUMO energy of the modifier is not less than 0.3 eV when hydrogen atoms are added to the unsaturated multiple bond; and

a protective layer induced from the modifier is formed on the surface of the polymer material by bonding the unsaturated multiple bond of the modifier to the carbon atoms of the backbone chain.

22. (Canceled)

23. (Currently amended) The porous film composed of the polymer material for the non-aqueous electrolyte secondary battery, according to claim 21,

wherein said modifier is selected from the group consisting of ethylene glycol dimethacrylate, ~~trimethylol propane~~ trimethylolpropane trimethacrylate, cyclohexyl methacrylate, octafluoro pentyl acrylate, octafluoro pentyl methacrylate, tetrafluoro propyl acrylate, tetrafluoro propyl methacrylate, vinyltris ( $\beta$ -methoxy ethoxy) silane, vinyl triethoxy silane, vinyltrimethoxy silane,  $\gamma$ -(acryloxy propyl) trimethoxy silane,  $\gamma$ -(methacryloxy propyl) trimethoxy silane,  $\gamma$ -(acryloxy propyl) triethoxy silane, and  $\gamma$ -(methacryloxy propyl) triethoxy ~~silane~~ silane.

24. (Withdrawn) The porous film composed of the polymer material for the non-aqueous electrolyte secondary battery, according to claim 20,

wherein:

the modifier is composed of a compound having an unsaturated multiple bond in the molecule thereof;

a HOMO energy of the modifier is not more than -10.1 eV when hydrogen atoms are added to the unsaturated multiple bond; and

a protective layer induced from the modifier is formed on the surface of the polymer material by bonding the unsaturated multiple bond of the modifier to the carbon atoms of the backbone chain.

25. (Canceled)

26. (Withdrawn – currently amended) The porous film composed of the polymer material for the non-aqueous electrolyte secondary battery, according to claim 24,

wherein said modifier is selected from the group consisting of ethylene glycol dimethacrylate, ~~trimethylol~~ trimethylol propane trimethacrylate, cyclohexyl methacrylate, octafluoro pentyl acrylate, octafluoro pentyl methacrylate, tetrafluoro propyl acrylate, tetrafluoro propyl methacrylate, heptadecafluoro decylacrylate, heptadecafluoro decylmethacrylate, vinyltris ( $\beta$ -methoxy ethoxy) silane, vinyl triethoxy silane, vinyltrimethoxy silane,  $\gamma$ -(acryloxy propyl) trimethoxy silane, and  $\gamma$ -(acryloxy propyl) triethoxy silane.

27. (Previously presented) The porous film composed of the polymer material for the non-aqueous electrolyte secondary battery, according to claim 20,

wherein said predetermined substituent has a -SiOSi- structure.

28. (Withdrawn) The porous film composed of the polymer material for the non-aqueous electrolyte secondary battery, according to claim 20,

wherein said predetermined substituent is bonded to a second modifier having a -SiOSi- structure.

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29. - 31. (Canceled)